RI99247DF
RAYMARK
3.6
11549

DRAFT FINAL
AREA III
REMEDIAL INVESTIGATION

VOLUME II OF II
APPENDICES

RAYMARK-FERRY CREEK-OPERABLE UNIT 3
STRATFORD, CONNECTICUT

RESPONSE ACTION CONTRACT (RAC), REGION I

For
U.S. Environmental Protection Agency

By
Tetra Tech NUS, Inc.

EPA Contract No. 68-W6-0045
EPA Work Assignment No. 002-RICO-01H3
TtNUS Project No. N7491

November 2000

TETRA TECH NUS, INC.

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Heather M. Ford
Project Manager

George D. Gardner, P.E.
Program Manager

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Appendix B - Analytical Data - 1 Diskette
Appendix C - Hydrologic and Hydraulic Analysis
Appendix D - Ecological Risk Evaluation - Supporting Documentation (TtNUS); Ecological Risk Assessment (NOAA); Evaluation of Raymark Superfund Data for PRG Development (SAIC); Evaluation of Ecological Risk to Avian and Mammalian Receptors in the vicinity of Upper and Middle Ferry Creek (SAIC)
Appendix E - Supplemental Evaluation of Fate and Transport Processes
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APPENDIX A

BORING LOGS

BORING LOG FOR: RAYMARK - OU3- FERRY CREEK
PROJECT NO.: N7491-0320
LOGGED BY: TRACY DORGAN
DRILLED BY (Company/Driller): ATL / MIKE HAWKINS
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: D-SB01
START DATE: 7-15-97
COMPLETION DATE: 7-15-97
MON. WELL NO.:
CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [PID, PPM]
0	12 33	1.35	OU3-D-SB01-0002		Med. Dense	brown	Gravelly, SAND. mostly poorly graded	SP	Dry concrete, slag + cobbles	8.2
	26 20	2.0	0855 S-1		Dense		f/m sand, trace silt, trace slag + concrete fill (slag is vesicular		HSA grinding + catching on cobbles	
2	15 18	0.4	-0204		Med. Dense					10
	16 8	2.0	0905 S-2							
4	24 25	1.7	-0406		Med. Dense	Gray to BLK	Gravel. Few - some fine to coarse sand, trace silt very dense	GM	Wet - moist in nose, broke sampler, had to cut open. HSA to 7.0' w/out sample to get by obstruction	12
	29 53	2.0	0930 S-3							
7	49 56	1.45	-0709		Very Dense	Yellow Orange to Brown	Saprolite ? or coarse gravel, trace few silty, fine sand, gravel size fragments are easily broken apart with fingers			
8.5	100/5"	1.45	1000 S-4						Fill?	
							EOB @ 9.3' bgs.		HSA to 9.3' no let up in grinding. No break through	
							Move approx. 10-15' + re-attempt boring			

EOB @ 9.3 BGS

TYPE OF DRILLING RIG: CME 75
METHOD OF ADVANCING BORING: 4.25" ID HSA
METHOD OF SOIL SAMPLING: 3" OD SPLIT-BARREL DRIVEN WITH A 300 LB HAMMER
METHOD OF ROCK CORING: N/A
GROUNDWATER LEVELS: WATER @ 8.1' BGS W/AUGERS @ 9.3'
OTHER OBSERVATIONS:

Tetra Tech NUS, Inc.

BORING NO.: D-SB01

BORING LOG FOR: RAYMARK – OU3- FERRY CREEK
PROJECT NO.: N7491-0320
LOGGED BY: TRACY DORGAN
DRILLED BY (Company/Driller): ATL / MIKE HAWKINS
GRD. SURFACE

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: D-SB01B
START DATE: 7/15/97
COMPLETION DATE: 7/15/97
MON. WELL NO.:
CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [PID, PPM]
0							Refer to D-SB01 for log from 8.5' HSA to 5' bgs with out sampling. 2 pieces (each approx. 6" thick by 10" x 8") either slag or vesicular basalt similar to material exposed in berm lining wetlands.		Severe grinding and chattering from 0-3'. At 3', 2 pieces of vesicular basalt or slag come up on flights void from 3.5-4' grinding again at 4'-5'	
5	100/3"	3" / 3"	OU3-D-SB01B-0507 1410 S-1		Very Dense		Rock flour produced by grinding of augers + bit. White to gray, dry and loose with trace fine arg. gravel. Talcum powder consistency.			0.3
							EOB @ 5'3"			

TYPE OF DRILLING RIG:
METHOD OF ADVANCING BORING:
METHOD OF SOIL SAMPLING:
METHOD OF ROCK CORING:
GROUNDWATER LEVELS:
OTHER OBSERVATIONS:

BORING NO.: D-SB01B

Tetra Tech NUS, Inc.

BORING LOG FOR:	RAYMARK - OU3- FERRY CREEK		
PROJECT NO.:	N7491-0320	BORING NO.:	D-SB02
LOGGED BY:	TRACY DORGAN	START DATE:	7/14/97
TRANSCRIBED BY:	RAC	COMPLETION DATE:	7/14/97
DRILLED BY (Company/Driller):	ATL / MIKE HAWKINS	MON. WELL NO.:	
GRD. SURFACE		CHECKED BY:	
ELEVATION FROM:			

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [PID, PPM]
0	2 5	1.8	OU3-D-SB02-0002	Gravel + Sand		brown	S-1A 0-.6' = gravelly, sand, fill. trace silt , trace glass		matrix is held together w/ long asylcular asbestos like fibers dry	0
	5 4	2.0	1515 S-1			dark brown	S-1B .6-2.0 = fill, silty sand, poorly graded sand w/ red paint or pigment, asbestos fibers	SM ML		
2	4 4	2.0	-0204			Dark brn Gray w/red blotches	Similar to S-1B, more silt than sand, very high amount of fibers and dark red pigment		dry fill	0
	4 4	2.0	1540 S-2						moist, damp fill	
4	1 2	2.0	-0406							1.1 ppm
	1 1	2.0	1550 S-3	Fill						
6	4 4	1.3	-0608						fill	0.6
	4 5	2.0	1605 S-4							
8	9 14	1.1	-0810	8.5'		Light Gray	sand -f/m poorly graded trace fine gravel, trace metal	SP	Saturated fill	0.3
	11 10	2.0	1610 S-5							
10	9 19	1.65	-1012			Black	sand, well graded f-c sand, trace silt, dark gray to black, loose, trace - few fine gravel	SW	Saturated, no odor	0.0
	26 25	2.0	1620 S-6							
12	24 26	1.7	-1214		Dense		Sandy, gravel, well graded gravel. Dense and tight trace silt	GW	No odor	0.2
	37 29	2.0	1630 S-7		Mod. Dense					
14	7 7	1.9	-1416			Bright Orange	sand, some fine coarse gravel. Well graded sand	SW	Bright oxidized orange color	0.0
	17 31	2.0	1655 S-8				EOB @16'			

TYPE OF DRILLING RIG:	CME-75
METHOD OF ADVANCING BORING:	4.25" I D HSA
METHOD OF SOIL SAMPLING:	3" OD SPLIT BARREL DRIVEN WITH 300 LB HAMMER
METHOD OF ROCK CORING:	N/A
GROUNDWATER LEVELS:	10.8 BGS W/AUGERS @ 14' LEVEL C @ 1515 FOR RIG GEOLOGIST. DRILLERS USING WATER
OTHER OBSERVATIONS:	FOR DUST CONTROL

BORING NO.: D-SB02

Tetra Tech NUS, Inc.

BORING LOG FOR: RAYMARK - OU3- FERRY CREEK
PROJECT NO.: N7491-0320
LOGGED BY: TRACY DORGAN
DRILLED BY (Company/Driller): ATL / MIKE HAWKINS
GRD. SURFACE

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: D-SB03
START DATE: 8/6/97
COMPLETION DATE:
MON. WELL NO.:
CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, PPM]
0	1 1	18	OU3-D-SB03-0002			BR	Silty sand, few coarse subang. gravel poorly graded org. debris (roots + plant fiber in top 6")	SP	grinding boney from 1 bgs - 4' dry moist in nose	0
	3 4	24	1245 S-1							
2	3 3	9	-0204			Gray	Fill. Concrete and brick fragments few - little med. coarse sand, tr. charcoal	fill	Saturated in nose	0
	3 6	24	1258 S-2	Fill					saturated	
4	2 2	6	-0406						Wire (copper) on bit betw. 4-8'	0
	8 3	24	1308 S-3	6'2"						
6	1 1	13	-0608	Silt		BR	Silt, few fine sand, a large qty of plant roots and fibers		sulfide odor black silt @ contact with fill	21
	1 1	24	1315 S-4	8'1"						
8	1 2	13	-0810	Sand		gray	Sand, mostly f-c well graded sand, tr. fine rounded gravel, tr. silt	SW	Saturated	5
	1 1	24	1322 S-5							
10	1 2	22	-1012			brown	incl. gravel = few gravel		Saturated	55
	6 6	24	1330 S-6							
12	2 4	18	-1214			Gray			saturated	0
	5 3	24	1340 S-7							
14	3 4	23	-1416							15
16	5 4	24	1345 S-8				EOB @ 16'			

TYPE OF DRILLING RIG: CME-850 ATV
METHOD OF ADVANCING BORING: 4.25" I D HSA
METHOD OF SOIL SAMPLING: 3" OD SPLIT BARREL DRIVEN WITH 300 LB HAMMER
METHOD OF ROCK CORING: N/A
GROUNDWATER LEVELS: WATER @ 5.5'
OTHER OBSERVATIONS:

BORING NO.: D-SB03

Tetra Tech NUS, Inc.

BORING LOG FOR:	RAYMARK – OU3- FERRY CREEK	BORING NO.:	D-SB04
PROJECT NO.:	N7491-0320	START DATE:	7/10/97
LOGGED BY:	TRACY DORGAN	COMPLETION DATE:	7/10/97
DRILLED BY (Company/Driller):	ATL / PAUL DAVIS / MIKE HAWKINS	MON. WELL NO.:	No Well
GRD. SURFACE		CHECKED BY:	

TRANSCRIBED BY: _____

ELEVATION FROM: _____

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [PID,]
0	4	1.3	OU3-D-SB04-0002	Asphalt			2" asphalt at surface		HSA .5' then drove s.s to 2.0'	0 ppm
2	15 13	1.5	1410			BRN	Gravelly, sand, tr. silt, well graded	SW	lower foot more dense	
	10 22	1.7	-0204				tr. wood and asphalt			0 ppm
4	23 18	2.0	1425							
	4 4	0.75	-0406				fill incl. metal and glass		saturated	0 ppm
6	2 2	2.0	1450							
	2 3	0	No Sample				No sample, no recovery		coarse gravel in nose	no sample
8	2 2	2.0	No Recovery							
	2 1	0.8	-0810			BLK	silty, gravelly sand, fill incl. glass, rubber wire metal and poss.gasket material	SW	gasket material (thin fibrous paper like material) lt. pet. odor	2.5 ppm
10	2 2	2.0	1510							
	2 3	1.2	-1012				1 large piece of wood (tree trunk or limb)			1.5 ppm
12	4 6	2.0	1530							
	3 2	0.75	-1214							2.0 ppm
14	2 3	2.0	1545							
	WOR 2	1.9	-1416			Dk Gray	Silt, some fine sand, trace clay trace glass and ceramic fragments trace wood	ML	trace glass + china/ ceramic frags. peach pit in nose	0.2 ppm
16	2 3	2.0	1600				EOB @ 16'			

TYPE OF DRILLING RIG:	CME-75
METHOD OF ADVANCING BORING:	4.25" I D HSA
METHOD OF SOIL SAMPLING:	3" OD SPLIT BARREL DRIVEN WITH 300 LB HAMMER
METHOD OF ROCK CORING:	N/A
GROUNDWATER LEVELS:	4.6' BGS W/HSA TO 12' MEASURED INSIDE PIPE
OTHER OBSERVATIONS:	

BORING NO.: D-SB04

Tetra Tech NUS, Inc.

BORING LOG FOR:	RAYMARK - OU3- FERRY CREEK		
PROJECT NO.:	N7491-0320	BORING NO.:	D-SB05
LOGGED BY:	TRACY DORGAN	START DATE:	7/11/97
TRANSCRIBED BY:		COMPLETION DATE:	7/11/97
DRILLED BY (Company/Driller):	ATL / MIKE HAWKINS, PAUL DAVIS	MON. WELL NO.:	N/A
GRD. SURFACE		CHECKED BY:	
ELEVATION FROM:			

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION 3" Asphalt at surface	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [PID, PPM]
0	4	1.3	OU3-D-SB05-			BR	Sand some fine subrounded gravel trace silt, sand is well graded	SW	dry and loose	1.0
2	13 15	1.5	0810							
	10 9	1.2	-0204			LightBrown Gray	.5' = sand, poorly graded, trace gravel .7' = sandy, gravel trace silt, gravel fine - coarse	SP	dry and loose	2.0
4	8 5	2.0	0820					GM		
	6 4	1.1	-0406			gray	sand well graded, some subrounded f-c gravel	SW	water table (sat.) @ ~5' bgs slight pet. or asphalt odor noted	2.0
6	1 2	2.0	0830			Dark gray				
	2 1	.4	-0608							2.0
8	1 2	2.0	0845							
	3 2	.3	-0810							1.3
10	1 2	2.0	0855	Fill			trace glass and wire noted fill			
	5 3	.6	-1012			Dk Gray	sand, some subrounded f-c gravel, few silt, root and vegetation debris tr. clay		hydrogen sulfide odor	0.5
12	2 1	2.0	0900							
	1 1	1.3	-1214	12.5'-13'			.5' = sand poorly graded trace glass and metal fill	SP	fill	0.3
14	1 2	2.0	0915				.8' = silt, some fine sand, no glass found trace roots plant fibers , tr. clay	ML	plant fibers	
	1 1	1.7	-1416							0.3
16	2 2	2.0	0920				EOB @ 16'			

TYPE OF DRILLING RIG:	CME-75 (truck)
METHOD OF ADVANCING BORING:	4.25" I D HSA
METHOD OF SOIL SAMPLING:	3" OD SPLIT BARREL DRIVEN WITH 300 LB HAMMER
METHOD OF ROCK CORING:	N/A
GROUNDWATER LEVELS:	11.5' BGS W/AUGERS @ 16'
OTHER OBSERVATIONS:	

BORING NO.: D-SB05

Tetra Tech NUS, Inc.

BORING LOG FOR:	RAYMARK – OU3- FERRY CREEK		BORING NO.: D-SB06
PROJECT NO.:	N7491-0320		START DATE: 7-16-97
LOGGED BY:	TRACY DORGAN	TRANSCRIBED BY:	COMPLETION DATE: 7-16-97
DRILLED BY (Company/Driller):	ATL / MIKE HAWKINS		MON. WELL NO.:
GRD. SURFACE ELEVATION:		ELEVATION FROM:	CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = (PID (PPM))
0	15 32	19	OU3-D-SB06-0002		Dense	BR	Gravelly sand, trace silt fill trace asphalt crumble		loose, dry, no odors HSH grinding 1-3"	0
	35 23	24	0930 S-1							
2	11 16	21	-0204		Med. Dense	Mottled Brown and black	Gravelly sand, trace fen. silt, fill included charcoal, asphalt wood, glass + metal in trace amounts		sm. quantity of fill debris except asphalt + charcoal which are more prevelant	5 ppm
	23 18	24	0940 S-2							
4	7 10	20	- 0406			Dark Gray/BL	Fine sand, little some fine gravel, trace silt sand is poorly graded, fill	SP	Similar debris to 0204, moist, heavy pet. odor?	5 ppm
	16 16	24	0958 S-3				Fill debris incl. charcoal, glass + china/ceramic vegetation and root mat. @ 5-5.5"			
6	9 5	12	-0608		loose		Similar to S-3 above, but no vegetation, less gravel @ bottom		near saturation in nose	2-4 ppm
	7 5	24	1005 S-4							
8	1 2	10	-0810		Very Loose				saturated	1-2 ppm
	1 2	24	1020 S-5							
10	2 3	9	-1012				wood debris, vitrified clay fragments and glass			0
	3 3	24	1035 S-6							
12	2 2	9	-1214				Sand, f.-c well graded, trace silt trace fine gravel, fen, little wood fill	SW	Woody, incl. twigs and branches, also 1 piece	0
	2 3	24	1045 S-7						slag	
14	1 1	24	-1416			gray	silt some fine sand, fill trace glass and ceramic debris.	ML		5 ppm
16	1 1	24	1055 S-8	Fill						

TYPE OF DRILLING RIG:	CME 75		Tetra Tech NUS, Inc.
METHOD OF ADVANCING BORING:	4.25" ID HSA		
METHOD OF SOIL SAMPLING:	3" OD SPLIT BARREL W/300 LB HAMMER		
METHOD OF ROCK CORING:			
GROUNDWATER LEVELS:	14' W.AUGERS @ 14'		
OTHER OBSERVATIONS:	START @ 0920	BORING NO.: D-SB06	PAGE: 1 OF 1

BORING LOG FOR: RAYMARK – OU3- FERRY CREEK
PROJECT NO.: N7491-0320
LOGGED BY: TRACY DORGAN
DRILLED BY (Company/Driller): ATL / MIKE HAWKINS
GRD. SURFACE

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: D-SB07
START DATE: 7/16/97
COMPLETION DATE: 7/16/97
MON. WELL NO.:
CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [PID, (PPM)]
0	6 15	1.6	OU3-D-SB07-0002		Med.	brown to dark brown	Fill - sand, poorly graded fine sand	SP	Dry, no odor	7 ppm
	29 13	2.0	1225 S-1		Dense		Few fine gravel, trace silt, glass vit. clay & org. debris		Vit, clay or brick, glass one piece cobble	
2	4 5	1.6	-0204		Loose		Fill - gravelly sand, well graded		moist, fill incl.	8 ppm
	5 6	2.0	1240 S-2			BL	f-c sand, tr. silt ,bottom 2" black charcoal		glass, metal charcoal tile, vitrified clay, slag	
4	4 5	1.6	DUP -0406				fill - similar to S-2, bottom 3" are asphalt shingle like materials w/ pet. odor		pet. odor bottom is saturated	65 ppm
	5 4	2.0	1250 S-3							
6	5 10	2.0	-0608		Med. Dense		fill - gravelly sand, similar to S-2, black, fill debris incl. newsprint		saturated newspaper near nose	10 ppm
	16 13	2.0	1310 S-4							
8	3 2	0.2	-0810		Very		similar to S-4			4 ppm
	1 1	2.0	1330 S-5	10.2	Loose				fill inc. copper wire	
10	2 1	1.6	-1012	Poss. bottom of fill		Dk Gray	silt, mostly silt, trace fine sand	ML	no man made debris noted below 10.2	2 ppm
	1 1	2.0	1340 S-6				trace organic matter (plant fibers)		organic matter	
12	1 2	1.3	-1214							1 ppm
	1 1	2.0	1355 S-7							
14	1 1	1.8	-1416							1 ppm
16	1 1	2.0	1410 S-8							

EOB @ 16'

TYPE OF DRILLING RIG: CME-75
METHOD OF ADVANCING BORING: 4.25" I D HSA
METHOD OF SOIL SAMPLING: 3" OD SPLIT BARREL DRIVEN WITH 300 LB HAMMER
METHOD OF ROCK CORING: N/A
GROUNDWATER LEVELS: 12.0' W/HSA @ 14' BGS
OTHER OBSERVATIONS:

BORING NO.: D-SB07

Tetra Tech NUS, Inc.

BORING LOG FOR: RAYMARK - OU3- FERRY CREEK
PROJECT NO.: N7491-0320
LOGGED BY: TRACY DORGAN
DRILLED BY (Company/Driller): ATL / MIKE HAWKINS / PAUL DAVIS
GRD. SURFACE

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: D-SB08
START DATE: 7/11/97
COMPLETION DATE: 7/11/97
MON. WELL NO.:
CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [PID,(PPM)]
0	1 2	0.6	OU3-D-SB08-0002			brown	sand, some silt, fill	SM	dry and loose	1.0
2	5 9	2.0	1040							
	9 4	0.5	- 0204				trace broken glass		glass fragments	0 ppm
4	4 6	2.0	1100							
	1 2	0.5	-0406				saturated		Saturated @ ~4' loose ∇ @ ~4' *	0 ppm
6	1 2	2.0	1110							
	1 7	0.6	-0608				fill includes bone fragments glass and wire			0 ppm
8	2 3	2.0	1117							
	1 2	0.7	-0810			BLK	Silt few fine sand, trace clay trace glass fragments	ML		0 ppm
10	3 2	2.0	1130						glass	
	1 1	0.9	-1012				trace glass fragments		hydrogen sulfide odor	0 ppm
12	2 2	2.0	1140							
	1 2	1.4	-1214				trace roots and shell fragments			0.5 ppm
14	2 4	2.0	1155				trace glass fragments			
	1 1	1.9	-1416							
16	2 3	2.0	1205							

EOB @ 16'

TYPE OF DRILLING RIG: CME-75 TRUCK MOUNT
METHOD OF ADVANCING BORING: 4.25' I D HSA
METHOD OF SOIL SAMPLING: 3" OD SPLIT BARREL DRIVEN WITH 300 LB HAMMER
METHOD OF ROCK CORING: N/A
GROUNDWATER LEVELS: WATER LEVEL MEAS. INSIDE HSA @ 14' BGS W/AUGER IN SILT
OTHER OBSERVATIONS: * USING POLY BAGS IN NOSE OF SAMPLER TO IMPROVE RECOVERY BELOW WATER TABLE

BORING NO.: D-SB08

Tetra Tech NUS, Inc.

BORING LOG FOR: RAYMARK - OU3- FERRY CREEK
PROJECT NO.: N7491-0320
LOGGED BY: TRACY DORGAN
DRILLED BY (Company/Driller): ATL / MIKE HAWKINS, PAUL DAVIS
GRD. SURFACE

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: D-SB09
START DATE: 7/10/97
COMPLETION DATE: 7/10/97
MON. WELL NO.: No Well
CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [PID]
0							Asphalt and road bedding 2" asphalt w/ gravel/asphalt brown			
1										
1	1 3	1.8	OU3-D-SB09-0103			Dk gray	fill gravelly sand 2" thick asphalt and 2" thick wood below 2.5'	SP	Saturated @ 2-2.5' wood, asphalt and concrete debris noted	2.5 ppm
3	3 4	2.0	1230							
3	10 7	.5	-0305			Dk Gray	fill, gravelly sand with 2" thick asphalt, black, saturated	SP	Saturated, asphalt odor	0 ppm
5	9 8	2.0	0920							
5	5 4	.5	-0507			Dk Gray	Gravelly sand, poorly graded, dark gray - black	SP	Saturated asphalt odor	0 ppm
7	3 3	2.0	0935		Loose					
7	3 1	.5	-0709							0 ppm
9	1 2	2.0	0940							
9	1 1	.3	-0911				gravel, trace med. course sand, trace glass fragments, fill .	GM		0 ppm
11	1 1	2.0	1130							
11	1 2	1.6	-1113				2 similar to above silt some fine sand, tr. clay	ML	1 piece clear glass in silt	2.5 ppm
13	1 2	2.0	1140			Tan Gray	tan-gray - 1piece glass in silt			
13	WOR 1	2.0	-1315							3 ppm
15	2 2	2.0	1200 DUP 1210							

EOB @ 15'

TYPE OF DRILLING RIG:
METHOD OF ADVANCING BORING: 4.25" I D HSA
METHOD OF SOIL SAMPLING: 3" OD SPLIT BARREL DRIVEN WITH 300 LB HAMMER
METHOD OF ROCK CORING: N/A
GROUNDWATER LEVELS:
OTHER OBSERVATIONS:

BORING NO.: D-SB09

Tetra Tech NUS, Inc.

Brown & Root Environmental

SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK.

Sample ID: OU3 - D-S001-0002

B&R Job No./PMS 7991-0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: ~~Sediment Core Tube~~ 6-inch Hand Auger

Depth Sampled: 0-2 feet

Sample Date & Time: 7/23/97 1130 hours Dup _____ hours

Sampler(s): Geoff DiCenso, Courtney Moore

Data Recorded By: Courtney Moore
Signature

TYPE OF SAMPLE: (Check all that apply)

- ✓ Soil
- ✓ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

(Include sample source & lot no.)

pid - neg

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)
silt & fine sand, trace sm gravel, little coarse sand
some med sand, trace shells & organic matter

SAMPLE DATA/REMARKS:
Attempted a core tube near the river. Collected sample after 4 hand auger attempts due to shallow bed rock

ANALYSIS	BOTTLE LOT NO.	TEMP (oC)	SPECIFIC CONDUCTIVITY (mmhos/cm)	pH STANDARD UNITS	TURBIDITY NTU	DISSOLVED OXYGEN (mg/L)	SALINITY
LEAD & COPPER							
TAL METALS X							
SVOC X							
PEST / PCB X							
DIOXIN							
SPLP METALS							
TOC. X							
GRAIN SIZE							
ATTERBURG LIMITS							
ASBESTOS X							
PCB HOMOLOGUE							

B&R FORM 0005

Brown & Root Environmental

SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - KELLY CREEK

Sample ID: OU3 - D-SD02-0002

B&R Job No./PMS 7491-0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: ~~Stainless Steel Tube~~ Gmd. Hand Auger

Depth Sampled: 0-2' feet

Sample Date & Time: 7/23/97 0920 hours Dup _____ hours

Sampler(s): Geoff DiCensi, Courtney Moore

Data Recorded By: _____ Signature

TYPE OF SAMPLE: (Check all that apply)

- ✓ Soil
- ✓ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)
Black silt, some vegetation, trace fine sand

SAMPLE DATA/REMARKS:

ANALYSIS	BOTTLE LOT NO.	TEMP (oC)	SPECIFIC CONDUCTIVITY (mmhos/cm)	pH STANDARD UNITS	TURBIDITY NTU	DISSOLVED OXYGEN (mg/L)	SALINITY
LEAD & COPPER							
TAL METALS X							
SVOC X							
PEST / PCB X							
DIOXIN							
SPLP METALS							
TOC. X							
GRAIN SIZE X							
ATTERBURG LIMITS X							
ASBESTOS X							
PCB HOMOLOGUE							

B&R FORM 0005

Brown & Root Environmental

SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - KELLY CREEK.
Sample ID: OU3 - D-SD02-0204

B&R Job No./PMS 7491-0320
Replicate/Duplicate No.: _____ (if applicable)

Sample Method: ~~Sediment Core Tube~~ Grab Hand Auger
Depth Sampled: 2-4 feet
Sample Date & Time: 7/27/97 0930 hours Dup _____ hours
Sampler(s): Geoff DiGrado

Data Recorded By: _____ Signature

TYPE OF SAMPLE: (Check all that apply)

- ✓ Soil
- ✓ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)
Black and silt, some fine sand

SAMPLE DATA/REMARKS:

ANALYSIS	BOTTLE LOT NO.	TEMP (oC)	SPECIFIC CONDUCTIVITY (mmhos/cm)	pH STANDARD UNITS	TURBIDITY NTU	DISSOLVED OXYGEN (mg/L)	SALINITY
LEAD & COPPER							
TAL METALS X							
SVOC X							
PEST / PCB X							
DIOXIN							
SPLP METALS							
TOC. X							
GRAIN SIZE X							
ATTERBURG LIMITS X							
ASBESTOS X							
PCB HOMOLOGUE							

B&R FORM 0005

Brown & Root Environmental

SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK

Sample ID: OU3-D-SD02D-0002

B&R Job No./PMS 7491-0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Hand Auger

Depth Sampled: 0-2 feet

Sample Date & Time: 7/23/97 0940 hours Dup _____ hours

Sampler(s): Geoff DiCenso, Gurtney Moore

Data Recorded By: [signature] Signature

TYPE OF SAMPLE: (Check all that apply)

- ___ Soil
- ✓ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)

Black silt, ~~trace veg.~~ some veg. trace fine sand

SAMPLE DATA/REMARKS:

ANALYSIS	BOTTLE LOT NO.
Lead & Copper	
TAL Metals X	
SVOC X	
PEST/PCB X	
DIOXIN	
SPLP METALS	
TOC X	
GRAIN SIZE	
ATTERBURG LIMITS	
ASBESTOS X	
PCB Homologue	

Brown & Root Environmental

SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK

Sample ID: OU3 - D-SD020-0204

B&R Job No./PMS 17491-0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Hand Auger

Depth Sampled: 2-4 feet

Sample Date & Time: 7/23/97 0950 hours Dup ____ hours

Sampler(s): Geoff DiCenso, Courtney Moore

Data Recorded By: [signature] Signature

TYPE OF SAMPLE: (Check all that apply)

- ✓ Soil
- ✓ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)

Black silt, wet - some fine sand

SAMPLE DATA/REMARKS:

ANALYSIS	BOTTLE LOT NO.
Lead & Copper	
TAL Metals X	
SVOC X	
PEST/PCB X	
DIOXIN	
SPLP METALS	
TOC X	
GRAIN SIZE	
ATTERBURG LIMITS	
ASBESTOS X	
PCB Homologue	

B&R FORM 0005

Brown & Root Environmental

SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK

Sample ID: OU3 - D - SD03 - 0002 - R

B&R Job No./PMS 17491 - 0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Hand Auger

Depth Sampled: 0-2 feet

Sample Date & Time: 7/23/97 ~~0810~~ 1020 hours Dup _____ hours

Sampler(s): Geoff DiCense, Courtney Mann

Data Recorded By: [signature] Signature

TYPE OF SAMPLE: (Check all that apply)

- ✓ Soil
- ✓ Sediment
- Lagoon/Pond
- Grab
- Trip Blank*
- Rinsate Blank*
- Field Duplicate collected
- Other (Specify): _____

pid - neg

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)

fine sand, trace organic matter, ~~fine~~ little sm gravel, some med. sand, some silt, little debris

SAMPLE DATA/REMARKS:

18 Attempts - ~~0-2~~ 0-2 ft on the 17th & 0-4 ft on the 18th difficulty due to brick, rebar & concrete

ANALYSIS	BOTTLE LOT NO.
Lead & Copper	
TAL Metals X	
SVOC X	
PEST/PCB X	
DIOXIN X	
SPLP METALS	
TOC X	
GRAIN SIZE	
ATTERBURG LIMITS	
ASBESTOS X	
PCB Homologue X	

B&R FORM 0005

Page ___ of ___

Brown & Root Environmental

SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK

Sample ID: OU3 - D - SD03 - 0204 - R

B&R Job No./PMS 17491 - 0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Hand Auger

Depth Sampled: 2-4 feet

Sample Date & Time: 7/23/97 1055 hours Dup _____ hours

Sampler(s): Groff Dilense, Courtney Moore

Data Recorded By: Courtney Moore
Signature

TYPE OF SAMPLE: (Check all that apply)

- ___ Soil
- ✓ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

(Include sample source & lot no.)

pid-neg

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)

med-course sand, sm-med gravel (same)

SAMPLE DATA/REMARKS:

Sampled ≈ 12ft east of 0-2 sample.

ANALYSIS		BOTTLE LOT NO.
Lead & Copper		
TAL Metals	X	
SVOC	X	
PEST/PCB	X	
DIOXIN	X	
SPLP METALS		
TOC	X	
GRAIN SIZE		
ATTERBURG LIMITS		
ASBESTOS	X	
PCB Homologue ~~X~~		R/B did not send

Brown & Root Environmental

SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK.

Sample ID: OU3 - 0-SD04-0002

B&R Job No./PMS 7991-0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Sediment Core Tube

Depth Sampled: 0-2 feet

Sample Date & Time: 7/23/91 1547 hours Dup _____ hours

Sampler(s): Geoff DiGenio, Cordney Moore

Data Recorded By: Cordney Moore
Signature

TYPE OF SAMPLE: (Check all that apply)

- ___ Soil
- ✓ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

(Include sample source & lot no.)

pid - neg

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)
black silt, little organic matter, trace fine sand

SAMPLE DATA/REMARKS:
pen ~~2.9~~ 2'9"
recovery 2'5"

ANALYSIS	BOTTLE LOT NO.	TEMP (oC)	SPECIFIC CONDUCTIVITY (mmhos/cm)	pH STANDARD UNITS	TURBIDITY NTU	DISSOLVED OXYGEN (mg/L)	SALINITY
LEAD & COPPER							
TAL METALS X							
SVOC X							
PEST / PCB X							
DIOXIN X							
SPLP METALS							
TOC. X							
GRAIN SIZE X							
ATTERBERG LIMITS X							
ASBESTOS X							
PCB HOMOLOGUE							

B&R FORM 0005

Brown & Root Environmental

SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK.

Sample ID: OU3-D-SD04D-0002

B&R Job No./PMS 7491-0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Core Tube

Depth Sampled: 0-2 feet

Sample Date & Time: 7/22/97 _____ hours Dup 1620 hours

Sampler(s): E. DiCenso, C. Moore

Data Recorded By: [signature] Signature

TYPE OF SAMPLE: (Check all that apply)

- ___ Soil
- ___ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)
Black silt, little sand (fine) Muck soft.

SAMPLE DATA/REMARKS:

ANALYSIS	BOTTLE LOT NO.	TEMP (oC)	SPECIFIC CONDUCTIVITY (mmhos/cm)	pH STANDARD UNITS	TURBIDITY NTU	DISSOLVED OXYGEN (mg/L)	SALINITY
LEAD & COPPER							
TAL METALS X							
SVOC X							
PEST / PCB X							
DIOXIN							
SPLP METALS							
TOC X							
GRAIN SIZE							
ATTERBURG LIMITS							
ASBESTOS X							
PCB HOMOLOGUE							

B&R FORM 0005

Brown & Root Environmental

SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - KELLY CREEK.

Sample ID: OU3 - D-S004-~~0204~~ 0203

B&R Job No./PMS 7491-0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Sediment Core Tube

Depth Sampled: ~~2-4~~ 2-3 feet

Sample Date & Time: 7/23/97 1603 hours Dup _____ hours

Sampler(s): Geoff DiCenso, Courtney Moore

Data Recorded By: [signature] Signature

TYPE OF SAMPLE: (Check all that apply)

- ✓ Soil
- ___ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

(Include sample source & lot no.)

pid - neg

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)

little organic matter, little fine sand, ~~tan~~ black silt

SAMPLE DATA/REMARKS:

sample taken from 2-3 due to refusal at 3' from rock bottom.

ANALYSIS	BOTTLE LOT NO.	TEMP (oC)	SPECIFIC CONDUCTIVITY (mmhos/cm)	pH STANDARD UNITS	TURBIDITY NTU	DISSOLVED OXYGEN (mg/L)	SALINITY
LEAD & COPPER							
TAL METALS X							
SVOC X							
PEST / PCB X							
DIOXIN X							
SPLP METALS							
TOC X							
GRAIN SIZE X							
ATTERBURG LIMITS							
ASBESTOS X							
PCB HOMOLOGUE							

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SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK

Sample ID: OU3-D-SD05-0002

B&R Job No./PMS: 17491-0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Core Tube

Depth Sampled: 0-2 feet

Sample Date & Time: 7/22/97 1430 hours Dup _____ hours

Sampler(s): C. Moore G. Pirenso

~~pen~~

Data Recorded By: Courtney Moore
Signature

TYPE OF SAMPLE: (Check all that apply)

- ___ Soil
- X Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

(Include sample source & lot no.)

pid - neg

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)

moist black silt, little organic matter, some fine sand

SAMPLE DATA/REMARKS:

pen ~~2.5 ft~~ 2.0 ft

recovery 1.0 ft

ANALYSIS		BOTTLE LOT NO.
Lead & Copper		
TAL Metals	X	
SVOC	X	
PEST/PCB	X	
DIOXIN		
SPLP METALS		
TOC	X	
GRAIN SIZE		
ATTERBURG LIMITS		
ASBESTOS	X	
PCB Homologue	X	

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SAMPLE LOG SHEET - SOLID PHASE

Site Name: LANMARK-043

Sample ID: 043-D-SD06-0002

B&R Job No./PMS 7491-0320

Replicate/Duplicate No.: 043-D-SD06D-0002 (if applicable)

Sample Method: Hand & Core

Depth Sampled: 0-2 feet 1340 RB

Sample Date & Time: 7/18/97 1:40 hours Dup 2:20 hours

Sampler(s): A. Osullivan
C. Moore

Data Recorded By: Andrew O'A
Signature

TYPE OF SAMPLE: (Check all that apply)

- ___ Soil
- X Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): ___

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)

SAMPLE DATA/REMARKS:

Brown MF SAND, some Silt, little debris (Glass)

ANALYSIS	BOTTLE LOT NO.	TEMP (oC)	SPECIFIC CONDUCTIVITY (mmhos/cm)	pH STANDARD UNITS	TURBIDITY NTU	DISSOLVED OXYGEN (mg/L)	SALINITY
TAL Metals ✓							
SVOC ✓							
PEST/PCB ✓							
Dioxin ✓							
TOC ✓							
Grain Size ✓							
Atterburg limits ✓							
Asbestos ✓							

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SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK - OU3

Sample ID: OU3-D-SD06-0204

B&R Job No./PMS 7491-0320

Replicate/Duplicate No.: OU3-D-SD06-0204 (if applicable)

Sample Method: HAND CORE

Depth Sampled: ~~0-2~~ feet 2-4 feet

Sample Date (MO) & Time: 7/18/97 2:10 hours Dup 2:30 hours

Sampler(s): A. O'Sullivan
C. Moore

Data Recorded By: A. O'A
Signature

TYPE OF SAMPLE: (Check all that apply)

- ___ Soil
- X Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): ___

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)

SAMPLE DATA/REMARKS:
Black Silt, little NF SAND & organic matter, trace Debris

ANALYSIS	BOTTLE LOT NO.	TEMP (oC)	SPECIFIC CONDUCTIVITY (mmhos/cm)	pH STANDARD UNITS	TURBIDITY NTU	DISSOLVED OXYGEN (mg/L)	SALINITY
TAL Metals ✓							
SVOC ✓							
Pest/PCB ✓							
Dioxin ✓							
TOC ✓							
Grain Size ✓							
Atterberg limits ✓							
Asbestos ✓							

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SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK

B&R Job No./PMS: 17491-0320

Sample ID: OU3-0-SD07-0002

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Hand Auger

Depth Sampled: 0-2 feet

Sample Date & Time: 7/17/97 1220 hours Dup _____ hours

Sampler(s): Geoff DiGiro, Courtney Moore

Data Recorded By: Courtney Moore
Signature

TYPE OF SAMPLE: (Check all that apply)

- ✓ Soil
- ✓ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)

SAMPLE DATA/REMARKS:

little brown fine sand, trace organic matter, trace glass, some unknown flaky substance

ANALYSIS		BOTTLE LOT NO.
Lead & Copper		
TAL Metals	X	
SVOC	X	
PEST/PCB	X	
DIOXIN		
SPLP METALS		
TOC	X	
GRAIN SIZE		
ATTERBURG LIMITS		
ASBESTOS	X	
PCB Homologue		

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SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK

Sample ID: OU3 - D-S007-0204

B&R Job No./PMS 17491-0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Hand Auger

Depth Sampled: 2-4 feet

Sample Date & Time: 7/17/97 1226 hours Dup _____ hours

Sampler(s): Geoff DiCenso, Courtney Moore

Data Recorded By: Courtney Moore
Signature

TYPE OF SAMPLE: (Check all that apply)

- ___ Soil
- ✓ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

pid - neg

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)

SAMPLE DATA/REMARKS:

Some fine sand, black silt, trace glass & organic matter & unknown flat flakey substance

ANALYSIS		BOTTLE LOT NO.
Lead & Copper		
TAL Metals	X	
SVOC	X	
PEST/PCB	X	
DIOXIN		
SPLP METALS		
TOC	X	
GRAIN SIZE		
ATTERBURG LIMITS		
ASBESTOS	X	
PCB Homologue		

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SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK.
Sample ID: OU3 - D-SD08.0002

B&R Job No./PMS 7491-0320
Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Core Tube
Depth Sampled: 0-2 feet - 2.6 ft. recovery
Sample Date & Time: 7/21/97 1215 hours Dup _____ hours
Sampler(s): Geoff DiCenso, Courtney Moore

Data Recorded By: [signature]
Signature

TYPE OF SAMPLE: (Check all that apply)

- ___ Soil
- ✓ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

PID - Neg

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)
Some vegetation, grey silt

SAMPLE DATA/REMARKS:

ANALYSIS	BOTTLE LOT NO.	TEMP (oC)	SPECIFIC CONDUCTIVITY (mmhos/cm)	pH STANDARD UNITS	TURBIDITY NTU	DISSOLVED OXYGEN (mg/L)	SALINITY
LEAD & COPPER							
TAL METALS X							
SVOC X							
PEST / PCB X							
DIOXIN							
SPLP METALS							
TOC X							
GRAIN SIZE X							
ATTERBURG LIMITS X							
ASBESTOS X							
PCB HOMOLOGUE							

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SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK.
Sample ID: OU3 - D-SD08-0204

B&R Job No./PMS 7491-0320
Replicate/Duplicate No.: _____ (if applicable)

Sample Method: _____
Depth Sampled: 2-4 feet - Recovery - 2.6 ft.
Sample Date & Time: 7/21/97 1225 hours Dup _____ hours
Sampler(s): Geoff DiCenso, Courtney Moore

Data Recorded By: _____ Signature

TYPE OF SAMPLE: (Check all that apply)

- ___ Soil
- ✓ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

PID - 40 (Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)
fine sand + silt, trace shells, little organic

SAMPLE DATA/REMARKS:

ANALYSIS	BOTTLE LOT NO.	TEMP (oC)	SPECIFIC CONDUCTIVITY (mmhos/cm)	pH STANDARD UNITS	TURBIDITY NTU	DISSOLVED OXYGEN (mg/L)	SALINITY
VOA X							
LEAD & COPPER							
TAL METALS X							
SVOC X							
PEST / PCB X							
DIOXIN							
SPLP METALS							
TOC X							
GRAIN SIZE X							
ATTERBURG LIMITS X							
ASBESTOS X							
PCB HOMOLOGUE							

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SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK

Sample ID: OU3 - U-SD09-0002

B&R Job No./PMS 7491-0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Sediment Core Tube

Depth Sampled: 0-2 feet Recovery: 3 ft

Sample Date & Time: 7 14 97 1240 hours Dup _____ hours

Sampler(s): Geoff D. Censo, Carolyn Moore

Data Recorded By: [signature] Signature

TYPE OF SAMPLE: (Check all that apply)

- ✓ Soil
- ✓ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

FID-Ø

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)

Black Silt, some organic matter

SAMPLE DATA/REMARKS:

ANALYSIS	BOTTLE LOT NO.	TEMP (oC)	SPECIFIC CONDUCTIVITY (mmhos/cm)	pH STANDARD UNITS	TURBIDITY NTU	DISSOLVED OXYGEN (mg/L)	SALINITY
LEAD & COPPER							
TAL METALS X							
SVOC X							
PEST / PCB X							
DIOXIN							
SPLP METALS							
TOC. X							
GRAIN SIZE							
ATTERBURG LIMITS							
ASBESTOS X							
PCB HOMOLOGUE							

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SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK.
Sample ID: OU3 - D-SD04-0204

B&R Job No./PMS 7991-0320
Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Sediment Core Tube
Depth Sampled: 2-4 feet Recovery 3.1 ft
Sample Date & Time: 7/21/97 1250 hours Dup _____ hours
Sampler(s): Greff DiCenso, Courtney Moore

Data Recorded By: [signature]
Signature

TYPE OF SAMPLE: (Check all that apply)

- ✓ Soil
- ✓ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

FID-Ø (Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)
trace medium gravel, fine sand + silt, with trace organic matter

SAMPLE DATA/REMARKS:

ANALYSIS	BOTTLE LOT NO.	TEMP (oC)	SPECIFIC CONDUCTIVITY (mmhos/cm)	pH STANDARD UNITS	TURBIDITY NTU	DISSOLVED OXYGEN (mg/L)	SALINITY
LEAD & COPPER							
TAL METALS X							
SVOC X							
PEST / PCB X							
DIOXIN							
SPLP METALS							
TOC. X							
GRAIN SIZE							
ATTERBURG LIMITS							
ASBESTOS X							
PCB HOMOLOGUE							

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SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK

B&R Job No./PMS: 17491-0320

Sample ID: OU3-D-SD10-0002

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Core Tube

Depth Sampled: 0-2 feet

Sample Date & Time: 7/22/97 1533 hours Dup 1535 hours

Sampler(s): G. DiCenso, Courtney Moore

Data Recorded By: Courtney Moore
Signature

TYPE OF SAMPLE: (Check all that apply)

- [ ] Soil
- [x] Sediment
- [ ] Lagoon/Pond
- [ ] Grab
- [ ] Trip Blank*
- [ ] Rinsate Blank*
- [ ] Field Duplicate collected
- [ ] Other (Specify): _____

(Include sample source & lot no.)

ptch. neg

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)
silt & fine sand, trace organic matter

SAMPLE DATA/REMARKS:
Pen 4 ft
recovery 2.2 ft

ANALYSIS		BOTTLE LOT NO.
VOC	X	
Lead & Copper		
TAL Metals	X	
SVOC	X	
PEST/PCB	X	
DIOXIN		
SPLP METALS		
TOC	X	
GRAIN SIZE		
ATTERBURG LIMITS		
ASBESTOS	X	
PCB Homologue		

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SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK

Sample ID: OU3 - D - SD10 - 0204

B&R Job No./PMS 17491-0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Core Tube

Depth Sampled: 2-4 feet

Sample Date & Time: 7/22/97 1600 hours Dup _____ hours

Sampler(s): C. Moore, Geoff Di Conca

Data Recorded By: Courtney Moore
Signature

TYPE OF SAMPLE: (Check all that apply)

- [X] Soil
- [X] Sediment
- [ ] Lagoon/Pond
- [ ] Grab
- [ ] Trip Blank*
- [ ] Rinsate Blank*
- [ ] Field Duplicate collected
- [ ] Other (Specify): _____

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)
first 6" ~~some~~ sand (fine) ~~& silt~~; trace organics, ~~some~~ silt
10" - 13" little organic matter, silt, little fine sand

SAMPLE DATA/REMARKS:

ANALYSIS	BOTTLE LOT NO.
Lead & Copper	
TAL Metals X	
SVOC X	
PEST/PCB X	
DIOXIN	
SPLP METALS	
TOC X	
GRAIN SIZE	
ATTERBURG LIMITS	
ASBESTOS X	
PCB Homologue	

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SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK

Sample ID: OU3-E-SD01-0204

B&R Job No./PMS 17491-0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Hand Auger

Depth Sampled: 2-4 feet

Sample Date & Time: 7/16/97 1350 hours Dup _____ hours

Sampler(s): Geoff DiCenso, Courtney Moore

Data Recorded By: _____ Signature

TYPE OF SAMPLE: (Check all that apply)

- ___ Soil
- ✓ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

PID - Neg

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)

Brown Silt, some vegetation, wet

SAMPLE DATA/REMARKS:

ANALYSIS	BOTTLE LOT NO.
Lead & Copper	
TAL Metals	
SVOC	
PEST/PCB	
DIOXIN X	
SPLP METALS	
TOC	
GRAIN SIZE X	
ATTERBURG LIMITS X	
ASBESTOS	
PCB Homologue	

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SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK

Sample ID: OU3-E-S001-0002

B&R Job No./PMS 17491-0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Hand Auger

Depth Sampled: 0-2 feet

Sample Date & Time: 7/16/97 1320 hours Dup _____ hours

Sampler(s): Groff DiCruo, Courtney Moore

Data Recorded By: _____ Signature

TYPE OF SAMPLE: (Check all that apply)

- ___ Soil
- ✓ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

PIO - Neg.

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)

Brown silt, some vegetation, wet

SAMPLE DATA/REMARKS:

ANALYSIS	BOTTLE LOT NO.
Lead & Copper	
TAL Metals	
SVOC	
PEST/PCB	
DIOXIN X	
SPLP METALS	
TOC	
GRAIN SIZE X	
ATTERBURG LIMITS X	
ASBESTOS	
PCB Homologue	

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SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK

Sample ID: OU3-E-SD02-0002

B&R Job No./PMS 17491-0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Hand Auger

Depth Sampled: 0-2 feet

Sample Date & Time: 7/16/97 1430 hours Dup _____ hours

Sampler(s): Geoff DiCenso, Courtney Moon

Data Recorded By: [signature] Signature

TYPE OF SAMPLE: (Check all that apply)

- ___ Soil
- ✓ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

PID - Neg

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)

Brown silt-to peat, ~~lots of vegetation~~ some vegetation

SAMPLE DATA/REMARKS:

ANALYSIS	BOTTLE LOT NO.
Lead & Copper	
TAL Metals	
SVOC	
PEST/PCB	
DIOXIN	
SPLP METALS	
TOC	
GRAIN SIZE X	
ATTERBURG LIMITS X	
ASBESTOS	
PCB Homologue	

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SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK

Sample ID: OU3 - E SD02-0204

B&R Job No./PMS 17491-0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Hand Auger

Depth Sampled: 2-4 feet

Sample Date & Time: 7/16/97 1440 hours Dup _____ hours

Sampler(s): Geoff DiCenso, Courtney Moore

Data Recorded By: [signature] Signature

TYPE OF SAMPLE: (Check all that apply)

- ___ Soil
- ✓ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

PID-Neg

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)

Brown silt, trace amounts of fine sand, little vegetation

SAMPLE DATA/REMARKS:

ANALYSIS	BOTTLE LOT NO.
Lead & Copper	
TAL Metals	
SVOC	
PEST/PCB	
DIOXIN	
SPLP METALS	
TOC	
GRAIN SIZE X	
ATTERBURG LIMITS X	
ASBESTOS	
PCB Homologue	

B&R FORM 0005

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SAMPLE LOG SHEET - SOLID PHASE

Site Name: Raymark- OU3- Ferry Creek

Sample ID: OU3- C- ~~[illegible]~~ RB SD02D-0002

B&R Job No./PMS 7491-0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Hand Auger

Depth Sampled: 0-2 feet

Sample Date & Time: 7/16/97 1451 hours Dup _____ hours

Sampler(s): Geoff DiCesare, Courtney Moore

Data Recorded By: [signature]
Signature

TYPE OF SAMPLE: (Check all that apply)

- ___ Soil
- ✓ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

PID - Neg

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)
Brown silt to peat, ~~[illegible]~~ Gray some vegetation,

SAMPLE DATA/REMARKS:

ANALYSIS	BOTTLE LOT NO.	TEMP (oC)	SPECIFIC CONDUCTIVITY (mmhos/cm)	pH STANDARD UNITS	TURBIDITY NTU	DISSOLVED OXYGEN (mg/L)	SALINITY
Lead Copper							
TAL Metals							
CVOC							
PEST/PCB							
Spec Metals							
TOC							
GSA							
Atterberg Limits							
Asbestos							
PCB Homologue							

B&R FORM 0005

Brown & Root Environmental

SAMPLE LOG SHEET - SOLID PHASE

Site Name: Raymark OU3 - Ferry Creek

Sample ID: OU3 - E - S002B 0204 - ~~A~~ AB

B&R Job No./PMS _____

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Hand Auger

Depth Sampled: 2-4 feet

Sample Date & Time: 7/16/97 1505 hours Dup _____ hours

Sampler(s): Geoff DiCenso, Courtney Moore

Data Recorded By: [signature]
Signature

TYPE OF SAMPLE: (Check all that apply)

- ___ Soil
- ✓ Sediment
- ___ Lagoon/Pond
- ___ Grab
- ___ Trip Blank*
- ___ Rinsate Blank*
- ___ Field Duplicate collected
- ___ Other (Specify): _____

PID - Neg

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)
Brown silt, trace amounts of fine sand, little vegetation

SAMPLE DATA/REMARKS:

ANALYSIS	BOTTLE LOT NO.	TEMP (oC)	SPECIFIC CONDUCTIVITY (mmhos/cm)	pH STANDARD UNITS	TURBIDITY NTU	DISSOLVED OXYGEN (mg/L)	SALINITY
L+C							
TAL Metals							
SVOC							
PEST/PCB							
SPLD Metals							
TOC							
GSA							
Att. Limits							
Asbestos							
PCB Homologue							

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SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK

Sample ID: OU3-E-SD03-0002

B&R Job No./PMS 17491-0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Hand Auger

Depth Sampled: 0-2 feet

Sample Date & Time: 7/16/97 1515 hours Dup _____ hours

Sampler(s): Geoff DiCenso, Courtney Moore

Data Recorded By: _____ Signature

TYPE OF SAMPLE: (Check all that apply)

- ✓ Soil
- Sediment
- Lagoon/Pond
- Grab
- Trip Blank*
- Rinsate Blank*
- Field Duplicate collected
- Other (Specify): _____

(Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.)

Some vegetation, Brown Silt/Peat

SAMPLE DATA/REMARKS:

ANALYSIS	BOTTLE LOT NO.
Lead & Copper	
TAL Metals	
SVOC	
PEST/PCB	
DIOXIN	
SPLP METALS	
TOC	
GRAIN SIZE X	
ATTERBURG LIMITS X	
ASBESTOS	
PCB Homologue	

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SAMPLE LOG SHEET - SOLID PHASE

Site Name: RAYMARK OU3 - FERRY CREEK

Sample ID: OU3-E-S003-0204

B&R Job No./PMS 17491-0320

Replicate/Duplicate No.: _____ (if applicable)

Sample Method: Hand Auger

Depth Sampled: 2-4 feet

Sample Date & Time: 7/16/97 1522 hours Dup _____ hours

Sampler(s): Groff D. Cruso, Courtney Moore

Data Recorded By: [signature] Signature

TYPE OF SAMPLE: (Check all that apply)

- ✓ Soil
- Sediment
- Lagoon/Pond
- Grab
- Trip Blank*
- Rinsate Blank*
- Field Duplicate collected
- Other (Specify): _____

PIO-Ny (Include sample source & lot no.)

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) Mud/silt, little vegetation

SAMPLE DATA/REMARKS:

ANALYSIS	BOTTLE LOT NO.
Lead & Copper	
TAL Metals	
SVOC	
PEST/PCB	
DIOXIN X	
SPLP METALS	
TOC	
GRAIN SIZE X	
ATTERBURG LIMITS X	
ASBESTOS	
PCB Homologue	

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Appendices B and C
(pages 51-62)
are available
in a separate file (size: 2.0 MB)

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